

10/502391

## INTERNATIONAL COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING

Rec'd PCT/PTO 26 JUL 2004

To:

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PCT

WRITTEN OPINION

(PCT Rule 66)



Date of mailing  
(day/month/year) 28 OCTOBER 2003 (28.10.2003)

Applicant's or agent's file reference  
GR-18806-PCT

REPLY DUE within 2 months from  
the above date of mailing

International application No.  
**PCT/KR03/00208**

International filing date (day/month/year)  
29 JANUARY 2003 (29.01.2003)

Priority date(day/month/year)  
29 JANUARY 2002 (29.01.2002)

International Patent Classification (IPC) or both national classification and IPC

**IPC7 G09G 3/30**

Applicant

GRACEL CO., LTD. et al

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

When ? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d)

How ? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3  
For the form and the language of the amendments, see Rules 66.8 and 66.9

Also For an additional opportunity to submit amendments, see Rule 66.4  
For an examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis  
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 19 MAY 2004 (19.05.2004)

Name and mailing address of the IPEA/KR



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# WRITTEN OPINION

International application No.

PCT/KR03/00208

## I. Basis of the opinion

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet/fig \_\_\_\_\_

### 5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

**WRITTEN OPINION**

International application No.

PCT/KR03/00208

**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	3, 4, 6-10, 13, 14, 16-19	YES
	Claims	1, 2, 5, 11, 12, 15	NO
Inventive step (IS)	Claims	8-10, 18,19	YES
	Claims	1-7, 11-17	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims	None	NO

**2. Citations and explanations**

D : JP2001-350431(2001.12.21) or US2001-0054711(2001.12.27)

**1. Novelty**

The provided pixel of Claims 1 and 2 comprises of a diode, a capacitor, and a light-emitting device. Here the light-emitting device is an EL element or a LED (which has a diode-like character). In this pixel structure, there is no transistor usually used for selecting a pixel. The pixel structure and the operations of each components explained in claims 1 and 2 are the same as those found in Fig.1 of D.

Claim 5 is the same as Claim 2 except the reversed polarity, and this is the same as found in Fig.5 of D.

Claims 11, 12, and 15 don't have any other technical concept and they are similar to Claims 1, 2, and 5 respectively.

So, Claims 1, 2, 5, 11, 12, 15 cannot be regarded as meeting the requirement of novelty (Art.33(2) PCT).

**2. Inventive Step**

Claims 1-4 refer to a pixel structure and its driving method, in which the light-emitting element has the characteristics of a diode. The driving methods of the claimed invention are very similar to those found in D as explained below.

In addressing period, the diode is on, and the light-emitting device is off, meanwhile the capacitor is charged by the data signal.

In light-emitting period, the diode is off, and the light-emitting device is on, meanwhile the stored charge flows through the light-emitting device.

These operations rely on the characteristics of the light-emitting device, a diode-like character, and on the characteristics of a capacitor, a resistance to abrupt voltage change.

The same principles and driving pulses are used in D, for instance, in Fig.1 and Fig.2.

Claims 5-7 are the same as claims 2-4 except the reversed polarity, and these are the same as found in Fig.5 and Fig.6 of D.

Claims 11-17 are related to Claims 1-7 respectively, without any other technical concept.

Therefore, Claims 1-7 and 11-17 cannot be regarded as meeting the requirement of inventive step (Art.33(3) PCT).

**3. Industrial Applicability**

The whole Claims are concerning the matrix-type display using EL or LED. So, this application can be regarded as meeting the requirement of industrial applicability (Art 33(4) PCT).

**WRITTEN OPINION**

International application No.

PCT/KR03/00208

**VI. Certain documents cited**

**1. Certain published documents (Rule 70.10)**

Application No.  
Patent No.

Publication date  
(day/month/year)

Filing date  
(day/month/year)

Priority date (valid claim)  
(day/month/year)

**2. Non-written disclosures (Rule 70.9)**

Kind of non-written disclosure

Date of non-written disclosure  
(day/month/year)

Date of written disclosure  
referring to non-written disclosure  
(day/month/year)